

Contributions towards a Monography of the order of PHOLADACEA, with Descriptions of new Species.—No. 2.

BY GEORGE W. TRYON, JR.

Additions to Bibliography.

- Deshayes, G. P. Letter in Zeit. für Malak. p. 44, March, 1845.
- Dufo, M. H. "Observations sur les mollusques marins, terrestres et fluviatiles des îles Séchelles et des Amirantes." Ann. des Sc. Nat. p. 221, 1840.
- Fischer, P. Note sur l'animal du *Jouannetia Cumingi*, suite de la description de deux espèces nouvelles du même genre. Journ. de Conchyl. p. 371, Oct., 1862.
- Jonas, J. H. Bemerkungen über einige der von Lamarck in seiner Hist. Natur. des Anim. s. Veitebr. aufgeführten Conchylien Arten, mit besonderer Rücksicht auf die Zusätze des Herrn, Deshayes. Zeit. für Malak. p. 135, Sept., 1844.
- Conchyliologische Notizen. Zeit. für Malak. p. 182., Nov., 1845.
- Stimpson, Wm. On the genus *Diplothyra*, Am. Jour. Science, p. 445, May, 1863.

Descriptions of Species.

ROCELLARIA DENTIFERA, Dufo.

Gastrochaena dentifera, Dufo. Ann. des Sc. Nat. p. 221, 1840.

Shell smooth and very thin, having an apophysis in the anterior part of each valve, and having also in each valve, but at the posterior extremity, a rounded and soldered piece.

Hab.—Madrepores, Seychelles and Admiral Islands. Very rare.

JOUANNETIA DUCHASSAINGI, Deshayes.

Jouannetia Duchassaingii, Deshayes, Fischer, Journ. Conchyl. p. 375, t. 15, f. 3, Oct., 1862.

"Testa globosa, solidissima, alba, valvis antice callo solido, longitudinaliter striato, munitis; area antica longitudinaliter costata, transversim dense striata; area postica subtile et oblique striata; appendiculo postico valvæ dextræ elongato, lato, rotundato, intus, lævi; impressionibus muscularibus latis, crassis, lamellas prominentes formantibus.

Diam. antér. post. 50 mill.

Alt. 41 "

Hab.—Panama. (Coll. Deshayes.)

Obs.—This fine species, which surpasses in its size the *Jouan. pectinata*, belongs to the group of *Jouan. Cumingi*; its specific characters are entirely different, so that it is impossible to confound it with that species."

JOUANNETIA VIGNONI, Fischer.

Jouannetia Vignoni, Fischer, Journ. de Conchyl. p. 376, t. 15, f. 4, Oct., 1862.

"Testa rotundato-ovata globosa, solidiuscula, valvis antice callo inflato munitis; area antica radiatim costata, transversim et valide striata; area postica late sulcata (in valva dextra,) dense et transversim striata (in valva sinistra;) appendiculo valvæ dextræ elongato, rostrato, ad margines serrato; impressionibus muscularibus posticis planis.

Diam. antér. post. 10 millim.

Alt. 7 "

Hab.—West Coast of Africa. (Captain Vignon.)

Obs.—This curious species approaches to the group of *J. globosa* and *pectinata*. It is remarkable for the development of the posterior appendage of the left valve, the inflation of the callous portion, &c.

The above two species are interesting additions to a genus which has hitherto been quite limited in species. The discovery of two (possibly three) new species of *Pholadacea* inhabiting the West Coast of North America, occurring within a few months, proves the truth of the remarks I made on this subject in the Proc. A. N. S., 1862, that, "greatly as the number of species have been increased by modern research, it is evident, from the general diffusion of the Order throughout the world, and from the incompleteness of our researches in those regions, which appear most to abound in them, . . . that the number at present known must be indeed a very small proportion of those which future investigation will probably reveal to us."

ZIRPHEA GABBII, Tryon, plate 1, fig. 1.

Shell large, transverse, obliquely divided by a deep furrow proceeding from the umbonal apex to the basal margin and forming a corresponding rib on the internal surface of the valve. Posteriorly to the furrow the shell is marked only by growth lines which, in crossing it, are elevated into sharp ribs, in which character they are continued to the anterior margin. The portion of the shell anterior to the radiating furrow is ornamented with numerous longitudinal ribs, approximating in pairs and rendered acutely scabrous at the intersection of the rib-like growth lines.

Ventral anterior margin emarginate. Dorsal anterior margin reflected and closely appressed over the beaks. Posterior dorsal margin declining somewhat to the quadrately rounded posterior lateral end. Color white.

Dimensions.—Length $1\frac{1}{2}$ inch; breadth $2\frac{1}{3}$ inch. Breadth anterior to furrow 9-10 inch; posterior to furrow $1\frac{1}{2}$ inch.

Hab.—Coast of Japan?—W. M. Gabb. My cabinet.

Observations.—This species is very closely allied to *Z. crispata* of our Atlantic coast, but may be distinguished by its more numerous and more scabrous ribs, by its greater proportionate width and the very disproportionate size of its anterior and posterior areas.

Can this be the species which Dr. Carpenter, in his Catalogue of our West Coast Mollusca, refers with doubt to *Z. crispata*? In the exchanges of commerce it may have been brought there, or, (no strange distribution in this family) it may even *exist* on both shores of the Pacific.

I received a single valve, somewhat mutilated, from our fellow member, Mr. Wm. M. Gabb, now of San Francisco, Cal., and name it after him, in recognition of the active service he is rendering to the science of Conchology in his adopted State.

XYLOTRYA SETACEA, Tryon, plate 1, fig. 2, 3.

Shell large, of nearly equal length and breadth. Beaks high, narrow, incurved, and thickened, the apex lower than the auricle, which is long, moderately wide, extending more than half the length of the valve and joining the medial portion by a rounded obtuse angle. Anterior area obliquely triangular, not more than half the length of the auricle, its upper edge protected by a rib culminating dorsally in a sort of knob. The anterior margin of the medial portion of the valve is straight, forming an acute angle with the triangular area; the posterior margin is oblique and somewhat convex. The junction of the auricle is marked externally by a depression of the surface, and internally by a projecting ledge. Apophysis short, oblique, broad. Base of valve tuberculate internally.

The valve is white, tinged with pink anteriorly and slightly glossy. The anterior area, which is separated from the body by a deep, narrow, sulcation, is sculptured by about thirty sharply cut, prominent, transverse ribs. The body is marked, first, by a narrow longitudinal area which is closely striate; then by a narrow double rounded rib, the surface of which is triangularly striate; then by a depressed space equally wide, with its sides accurately defined, and transversely sculptured. The whole surface of the body and auricle posteriorly is

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unmarked, except by growth lines, and the depression of surface at the commencement of the latter.

Pallet large; the jointed portion about the same length as the stalk, rather wide, with lateral extremities acuminate and inclining upwards. Sides of the joints fringed. These joints number about sixteen or eighteen. Stalk very slender and rounded.

Dimensions.—Length and breadth of valves about $\frac{1}{2}$ inch. Length of pallets $1\frac{1}{4}$ inch. Breadth of upper portion of pallets about $\frac{1}{6}$ inch.

Hab.—Bay of San Francisco, Cal.—Rev. J. Rowell. My cabinet and cabinet of Mr. Rowell.

Observations.—The valves of this species bear a very strong resemblance in size and form to *T. megotara*, Hanley. From *X. bipennata*, Turton, it is distinguished by the basal margins of the auricle and anterior area not being on the same transverse line, and by its broader, more closely jointed and shorter pallets.

From *X. cucullata*, Norman, it is distinguished by its different surface markings and the sharp angle of the anterior area with the body.

X. fimbriata has a shorter pallet and much smaller and differently formed valve; the same may be said of *X. minima*. *X. Stutchburyi* has very fine striae on the anterior area, and the pallets also differ. The latter, in the present species, are somewhat like those of *X. palmulata*, Lam., but are longer than in that species, and differ in the relative length and diameter of the stalks, and also by their fringed joints.

Our fellow member, Dr. A. L. Heermann, informed me some time since, of the existence of a shipworm at San Francisco, which, at the period of his visit there, (several years ago,) was committing great ravages in the destruction of the wharves of that city. It appears since to have become rare, and it was only after diligent inquiry that my friend, Mr. Gabb, found specimens in the collection of Rev. J. Rowell, who kindly sent me one.

Note on *Diplothyra*.

In Am. Journ. Science and Arts, May, 1863, p. 455, is a note by Dr. Stimpson on my genus *Diplothyra*, in which he asserts its identity with *Martesia* upon the ground that the additional dorsal valve is not a generic character, being sometimes developed by *Martesia cuneiformis*. Although many of the specimens of *Diplothyra Smithii* do not exhibit the double dorsal valve, I attribute it to the suppression or abortion of that appendage, and regard the double valve as the normal condition of the genus and species. The shells which possess it are generally the largest and best examples, and its non-appearance in others is not surprising when we consider the character of the substance in which they reside, and the evident compression and distortion of many of the specimens. The species of the family *Pholadidae* are very liable to distortion and to the suppression or division of their dorsal plates; for instance, in *Dactylina dactylus* they are frequently not developed at all; in *Martesia striata* several specimens before me exhibit incipient stages of a division of the umbonal plate into three, but I certainly would not on this account doubt the generic distinctness of *Penitella*, which is characterized by having three valves.

If Dr. Stimpson's *M. cuneiformis*, when perfect specimens are selected, exhibit dorsal valves corresponding with my figure of *D. Smithii*, then either *M. cuneiformis* must be a *Diplothyra*, or else the specimens alluded to are not veritable *cuneiformis*. I have very closely examined many specimens of *cuneiformis*, *striata*, *oblecta*, etc., but have not detected a second proper umbonal valve upon them.

Mr. S. P. Woodward, some years since, regarded the differences in the umbonal plates as expressing specific value only, but his theory has since found no supporters. I have closely re-examined all the *Pholades* in my collection, and weighed anew the value of the specific and generic characters, and the

result is a renewed conviction that *D. Smithii* is a very distinct species and that *Diplothyra* possesses in its umbonal plates a good generic character.

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Note on Penicillinae.

In a review of my work on *Pholadacea*, published in the American Journal of Science, Prof. Gill suggests that *Penicillinae* be elevated into a family, distinct from *Gastrochaenidae*, on account of the development of tentacles on the mantle-margin of the animal of the former. I have reviewed the subject and find no reason to alter the conclusions to which I originally arrived, namely, to regard this difference in the animal, in connection with differences in the shell, as possessing the value of a subfamily. Indeed, Prof. Gill has himself separated, as a subfamily only, (*Ceriphasinæ*) our American *Melanians*, which differ from the exotic species in having a mantle with a plain instead of fringed or tentaculate margin.

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Descriptions of two new Species of Fresh Water Mollusca, from Panama.

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1. *PLANORBIS FIELDII*, Tryon, plate 1, fig. 4, 5.

Description.—Shell small, moderately thick, polished, unmarked except by growth lines. Whorls three, almost equally convex above and below, and rapidly enlarging. Spire not much depressed, umbilical region of moderate width and not deep. Outer lip regularly rounded and almost equally expanded above and below the plane of the volutions. The aperture is slightly oblique.

Dimensions.—Diam. maj. 6, min. $4\frac{1}{2}$ millim. Alt. $2\frac{1}{2}$ millim.

Hab.—Panama. Capt. Field, U. S. N. Coll. A. N. S.; my coll.

Observations.—This species resembles some varieties of *Pl. deflectus*, Say, in which the whorl is not deflected at the aperture; but it differs in the sides being regularly rounded instead of carinate, as in that species, and also in the dilation of the aperture above and below the plane of the shell, in this respect resembling somewhat *Pl. corpulentus*, Say.

Pl. Panamensis, Dunker, is a very different shell from *Fieldii*, being more depressed, differently sculptured, etc.

Capt. Field presented to the Academy about a dozen specimens of this species, together with a new *Amnicola* (herein described,) and a few specimens of *Succinea recisa*, Morelet, all collected by himself at Panama.

2. *AMNICOLA PANAMENSIS*, Tryon, plate 1, f. 6

Description.—Shell conical, smooth and shining, consisting of four rapidly increasing, very convex whorls. Sutures deeply impressed; spire prominent, apex acute. Aperture rounded; umbilical region slightly perforate.

Dimensions.—Length $4\frac{1}{2}$ millim. Diameter 3 millim.

Hab.—Panama. Capt. Field, U. S. N.; coll. A. N. S.

Observations.—This shell is very like *A. decisa*, Hald., in form, but the whorls are more convex and the aperture nearly rotund. It also resembles *A. Cincinnatiensis*, Anth., which is, however, a more slender species. The shell is smaller than either of the above.

I think this is the first species of *Amnicola* found upon the Isthmus.

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Description of a new Exotic Melania.

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MELANIA HELENÆ, Tryon, t. 1, f. 7.

Description.—Shell turritid, whorls eight or nine, angulated in the middle,
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